Source Water Assessment Program (SWAP) Report For White Pines Condominiums

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- Inventory land uses within the recharge areas of all public water supply sources;
- Assess the susceptibility of drinking water sources to contamination from these land uses; and
- Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program

Date Prepared: December 3, 2001

Table 1: Public Water System (PWS) Information

PWS Name	**White Pines Condominiums**
PWS Address	**P.O. Box 570**
City/Town	**Stockbridge, Massachusetts**
PWS ID Number	**1283015**
Local Contact	**Douglas A. Weaver**
Phone Number	**413-637-1140**

Well Name	*Source ID#*	*Zone I (in feet)*	*IWPA (in feet)*	*Source Susceptibility*
Well #1	1283015-01G	288	800	High
Well #2	1283015-02G	288	800	High

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:
1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

The White Pines Condominiums, located in Stockbridge, has its water supply for 70 connections: 68 condominiums, office building, and pool building. The condominium community is served by on-site septic disposal systems. The two wells that serve the facility are nearly identical, 6-inch in diameter and 310 feet deep. Both wells are lined to a 210-foot depth with 4-inch casing to prevent surface water infiltration through the well casing annulus to minimize historical bacterial contamination. The Zone I and Interim Wellhead Protection Area (IWPA) radii for both wells are 288 feet and 800 feet, respectively.

The Zone I is the protected area immediately surrounding the wellhead while the IWPA provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The protective areas have been calculated based on the

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by **the** water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

highest volume pumped as reported to the Department in the 1996 Annual Statistics Report. The actual recharge area to the well may be significantly larger or smaller than the IWPA.

The wells are located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. USGS mapping shows the bedrock of the area as carbonate rock, mainly biotite-rich quartzose schist. The water from the two wells is treated by reverse osmosis (with pre-filtration) for hardness removal. For current information on water quality monitoring results, please contact the Public Water System contact person listed above in Table 1 for a copy of the most recent Consumer Confidence Report. Please refer to the attached map of the Zone I and IWPA and Table 1 for additional information regarding the location of the well and activities within the protection areas.

2. Discussion of Land Uses in the Protection Areas

There are few activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Nonconforming activities in the Zone I;**
2. **Underground Storage Tank;**
3. **Septic System;**
4. **Internal Transportation Corridors; and**
5. **Storm Water Catch Basins.**

The overall ranking of susceptibility to contamination for the well is high, based on the presence of two high threat land uses or activities in the Zone I and IWPA, as seen in Table 2.

1. Nonconforming activities in the Zone I – Currently, the water supplier does not own or control the entire Zone I area. Please note that systems not meeting DEP Zone I requirements for ownership or control must get DEP approval and address Zone I ownership prior to increasing water use or modifying systems. There are non-water supply activities occurring within the Zone I, such as structures (indoor pool), parking, and fertilizer use (Scott's Turf Builder).

Recommendations:

- ✓ Control access to the wellhead area and make every effort to acquire Zone I control or ownership.
- ✓ Use Best Management Practices for handling treatment chemicals and vehicles used to access the area.

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Road Salt and Sand Storage	Well #2	All Wells	Moderate	Use containment
Low Density Housing	All Wells	All Wells	Moderate	Use BMPs, encourage participation in household hazardous waste collection days
Internal Transportation Corridors and Parking	All Wells	All Wells	Moderate	Limit road salt usage and provide drainage away fro m wells
Hazardous Materials Storage	All Wells	No	High	Use containment or store outside of Zone I
Septic System	No	All Wells	Moderate	See attached brochure
Underground Storage Tank	Well #2	No	High	300-gallon tank, monitor for leaks, overfills.

*** For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.**

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 feet to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone II. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

- ✓ Do not use or store pesticides, fertilizers or road salt within the Zone I.

2. Underground Storage Tank (UST) – There is a UST located on the southeast side of the office building, with a maximum content of 300 gallons of #2 fuel oil, within Zone I . If managed improperly, USTs can be a potential source of contamination due to leaks or spills of the chemicals they store.

Recommendation:

- ✓ USTs in close proximity to the water supply should be closely monitored especially during deliveries. Any upgrades and modification must meet current construction standards and be done consistent with Massachusetts' plumbing, building, and fire code requirements. Consult with the local fire department for any additional local code requirements regarding USTs.

3. Septic Systems – The facility's septic system is located within the IWPA. The most significant threats from a septic system are from lack of maintenance and improper disposal of non-sanitary waste.

Recommendations:

- ✓ Provide residents and staff with information about proper maintenance and disposal practices for septic systems. Septic system components should be located, inspected, and maintained on a regular basis. Refer to the attachments for more information regarding septic systems.
- ✓ Avoid septic tank cleaners, especially those with acids and solvents.

4. Internal Transportation Corridors -- The Zone I and IWPA contain roads and parking areas developed and maintained by the White Pines Condominiums. Transportation corridors can be a potential source of contamination from road salt and automotive leaks or spills.

Recommendations:

- ✓ Monitor parking areas and roads for accidental leaks and spills.
- ✓ Do not use salt or deicers within the Zone I.
- ✓ Restrict access where possible.

5. Storm Water Catch Basins – Catch basins transport storm water from the roadway and adjacent properties to the ground. As flowing storm water travels, it picks up debris and contaminants from streets, parking areas and lawns. Common potential sources of contamination include lawn chemicals, pet waste, leakage from dumpsters, household hazardous waste, and contaminants from vehicle leaks, maintenance, washing or accidents.

Recommendation:

- ✓ Work with the Town to have to the catch basins inspected, maintained, and cleaned on a regular schedule. Additionally, street and parking lot sweeping reduces the amount of potential contaminants in storm runoff.

Other potential threats noted during the site visit include sand and salt storage in the IWPA, low-density housing, and potentially hazardous materials stored in the Zone I. The salt and sand mixture is covered with a tarp and enclosed within a wooden fence. The condominiums are all located within the IWPA, some within the Zone I. Encourage residents to utilize local household hazardous waste collection days, and supply information about BMPs for household hazardous waste management. Chlorine for the pool is stored in the west side of the pool building. Secondary containment is recommended for this storage if removing it from the Zone I is not feasible.

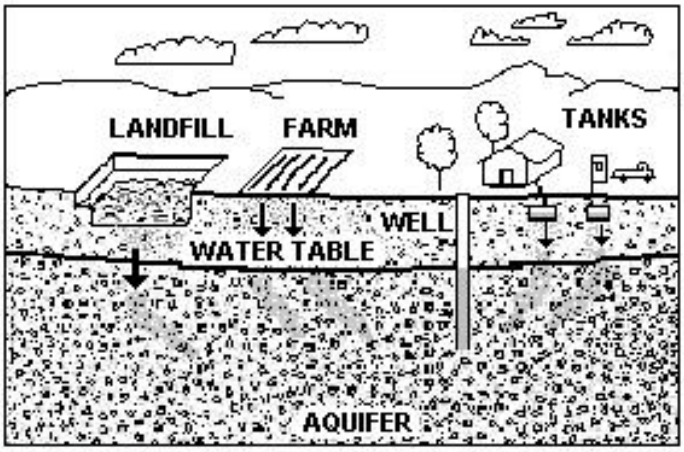

Figure 1: Example of how a well could become contaminated by different land uses and activities.

For More Information:

Contact Catherine Skiba in DEP's Western Region Office at (413) 755-2119 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at: www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been made available to the public water supplier, town boards, and the local media.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the well's susceptibility to contamination. White Pines Condominiums is commended for using natural gas as the heating source. White Pines Condominiums should review and adopt the key recommendations above and the following:

Priority Recommendations:

- Remove all reasonable non-water supply activities from the Zone I to comply with DEP's Zone I requirements.
- Consider well relocation if Zone I threats cannot be mitigated.
- Prohibit public access to the well by locking facilities and posting signs.

Zone I:

- Keep non-water supply activities out of the Zone I.
- Conduct regular inspections of the Zone I. Look for illegal dumping, evidence of vandalism, check any above ground tanks for leaks, etc.
- Use BMPs within the Zone I and restrict activities that could pose a threat to the water supply.
- Do not use pesticides and fertilizers in Zone I.
- If it's not feasible to purchase privately owned land within the Zone I at this time, consider a conservation restriction that would prohibit potentially threatening activities or a right of first refusal to purchase the property.
- Redirect road and parking lot drainage in the Zone I away from well.
- Do not use or store pesticides, fertilizers or road salt within the Zone I.
- Upgrade to propane or natural gas for power sources in areas utilizing fuel oil.

Training and Education:

- Train staff on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, groundskeepers, certified operator, and food preparation staff. Post labels as appropriate on raw materials and hazardous waste.
- Post drinking water protection area signs at key visibility locations.
- Work with your community to ensure that stormwater runoff is directed away from the well and is treated according to DEP guidance.

Facilities Management:

- Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials. To learn more, refer to http://www.state.ma.us/dep/bwp/dhm/files/sqgsum.pdf for the Requirements for Small Quantity Generators.
- Eliminate non-sanitary wastewater discharges to on-site septic systems. Instead, in areas using hazardous materials, discharge drains to a tight tank or sanitary sewer.
- Upgrade all oil/hazardous material storage tanks to incorporate proper containment and safety practices.
- Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.
- Septic system components should be located, inspected, and maintained on a regular basis.
- Concrete pads should slope away from well and well casing should extend above ground.
- For utility transformers that may contain PCBs, contact the utility to determine if PCBs have been replaced. If PCBs are present, urge their immediate replacement. Keep the area near the transformer free of tree limbs that could endanger the transformer in a storm.
- The facility is currently not registered as a generator of hazardous waste or waste oil. Review enclosed document "A Summary of Requirements for Small Quantity Generators of Hazardous Waste" to determine your status and regulatory requirements.

Planning:

- Work with local officials in Stockbridge to include White Pines Condominiums' IWPA in Aquifer Protection District Bylaws, and to assist you in improving protection.
- Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

Funding:

The Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet. Please note: each program year the Department posts a new Request for Response for the Grant program (RFR). On or about May 1 the new RFR is available and the application is due back on or about June 31. Other funding opportunities are described in "Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation" at http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Fact Sheet
- Your Septic System Brochure
- Pesticide Use Fact Sheet
- Industrial Floor Drains Brochure
- Healthy Schools Fact Sheet
- Wellhead Protection Grant Program Fact Sheet
- Source Protection Sign Order Form